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U.S. Department of Commerce
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NEW UTILITY PATENT APPLICATION TRANSMITTAL

(to be used for new applications only)

Attorney Docket Number	363-01
First Named Inventor	Lundahl
Total Pages in this Submission	24

jc600 U.S. PTO 06/04/99

jc518 U.S. PTO 09/326405 06/04/99

APPLICATION ELEMENTS

Notice: Checklist items mentioned under Application Elements section construct a new utility patent application. Please refer to MPEP Sections 506, 601, (37CFR 1.77, 1.53, 35 USC 111, 112, 113) for detailed explanation regarding completeness of an original patent application.

1. [X] Fee Transmittal Form (prescribed filing fee(s))

2. Specification
   - [X] Abstract of the Disclosure
   - [X] Title of the Invention
   - [X] Cross References to Related Applications *(if applicable)*
   - [ ] Statement Regarding Federally-sponsored Research/Development *(if applicable)*
   - [ ] Reference to Microfiche Appendix *(if applicable)*
   - [X] Background of the Invention
   - [X] Brief Summary of the Invention
   - [X] Brief Description of the Drawings *(if drawings filed)*
   - [X] Detailed Description
   - [X] Claim or Claims

3. [X] Drawing(s) *(when necessary as prescribed by 35 USC 113)*

4. [X] Executed Declaration

5. Genetic Sequence Submission *(if applicable, all must be included)*
   - [ ] Paper Copy
   - [ ] Computer Readable Copy
   - [ ] Statement Verifying Identical Paper and Computer Readable Copy

ACCOMPANYING APPLICATION PARTS

6. [ ] Assignment Papers
7. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
8. [ ] Computer Program in Microfiche
9. [ ] English Translation Document *(if applicable)*
10. [ ] Information Disclosure Statement/PTO-1449 [ ] Copies of IDS Citations
11. [ ] Petition Checklist and Accompanying Petition
12. [ ] Preliminary Amendment
13. [ ] Proprietary Information
14. [X] Return Receipt Postcard
15. [X] Small Entity Statement
16. [ ] Additional Enclosures *(please identify below):*

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Dean P. Edmundson
Signature	Dean P. Edmundson
Date	June 4, 1999

FOR OFFICIAL USE ONLY

Application Number			Class		Independent Claims	
Date of Receipt	Application Type		GAU		Total Claims	
	Filing Date		Foreign Filing License?		Drawing Sheets	
	Small Entity		Foreign Address?		Special Handling?	

LAW OFFICES OF
DEAN P. EDMUNDSON
A PROFESSIONAL CORPORATION

STUART PROFESSIONAL PARK
SUITE 3220
1136 E. STUART ST.
FORT COLLINS, COLORADO 80525

970-224-9502

Date: June 4, 1999

Case Docket No.: 363-01

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of

Inventor: DAVE B. LUNDAHL

For: IMPROVED WINDOW SCREEN SYSTEM

Enclosed are:

[X] 5 sheets of drawing.

[ ] An assignment of the invention to _____

_____

[ ] A certified copy of a _____ application.

[ ] An associate power of attorney.

[X] A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.

The filing fee has been calculated as shown below:

FOR:	NO. FILED	NO. EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE		OTHER THAN A SMALL ENTITY RATE	OTHER THAN A SMALL ENTITY FEE
BASIC FEE				$ 380	OR		$760
TOTAL CLAIMS	4 -20=	0	X 9 =	$ 0	OR	X 18=	$
INDEP CLAIMS	2 - 3=	0	X 39=	$ 0	OR	X 78=	$
MULTIPLE DEPENDENT CLAIM PRESENTED			$ 130	$ 0	OR	$ 260	$
			TOTAL	$ 380	OR	TOTAL	$

A check in the amount of $ 380.00 to cover the filing fee is enclosed.

Respectfully submitted,

Dean P. Edmundson

Dean P. Edmundson
Reg. No. 25,723
Attorney for Applicant

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR	Docket Number (Optional) 363-01

Applicant or Patentee: DAVE B. LUNDAHL

*>Application< or Patent No.: _____

Filed or Issued: On or about June 4, 1999

Title: IMPROVED WINDOW SCREEN SYSTEM

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

[X] the specification filed herewith with title as listed above.

[ ] the application identified above.

[ ] the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

[ ] No such person, concern, or organization exists.

[X] Each such person, concern or organization is listed below.

Point Five Windows, Inc.
1304 Duff
Ft. collins, Colorado 80524

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

DAVE B. LUNDAHL		
NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
Signature of inventor	Signature of inventor	Signature of inventor
Date 6/3/99	Date	Date

**>Burden Hour Statement: This form is estimated to take .3 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.<

PTO/SB/10 (12-97)
Approved for use through 9/30/00. OMB 0651-0031
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN

Docket Number (Optional): 363-01

Applicant, Patentee, or Identifier: DAVE B. LUNDAHL
Application or Patent No.:
Filed or Issued: On or about June 4, 1999
Title: IMPROVED WINDOW SCREEN SYSTEM

I hereby state that I am
- ☐ the owner of the small business concern identified below:
- ☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN: Point Five Windows, Inc.

ADDRESS OF SMALL BUSINESS CONCERN: 1304 Duff
Ft. Collins, Colorado 80524

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☒ the specification filed herewith with title as listed above.
- ☐ the application identified above.
- ☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:
- ☒ no such person, concern, or organization exists.
- ☐ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING: Gordon Hannaford

TITLE OF PERSON IF OTHER THAN OWNER: Vice-President

ADDRESS OF PERSON SIGNING: 1304 Duff, Ft. Collins, Colorado 80524

SIGNATURE: Gordon Hannaford DATE: 6/3/99

IMPROVED WINDOW SCREEN SYSTEM

Cross-Reference to Related Application

This application relates to and claims priority from my co-pending provisional application Serial No. 60/093,122, filed July 15, 1998.

Field of the Invention

This invention relates to window screens. More particularly, this invention relates to systems for attaching and securing screens to window frames.

Background of the Invention

Traditional window screens involve the use of a rigid frame (typically composed of metal) which extends around the periphery of the screen mesh and secures the screen mesh edges. This screen frame is then spring loaded in grooves in the window frame or mechanically connected or secured to the window frame to hold the screen in place.

The traditional system involves a number of disadvantages and inherent limitations. For example, the installation, removal and storage of conventional window screens frequently results in bent frames or damage to the screen mesh. Also, the required aluminum screen framing elements reduce the visual opening of a window. Further, some types of window frames do not have an appropriate

area to receive the normal metal framed screen or the window may not be rectangular in shape which renders the corner assembly or radius sections of the traditional metal screen frame problematic. Yet another disadvantage is that periodic maintenance may be required of the frame (i. e. painting, etc.).

U.S. Patent No. 4,249,589 describes apparatus for mounting an environment-controlling screen, sheet or membrane. However, separate frame sections are required and they must be secured to the inner periphery of an opening. This arrangement inherently reduces the size of the viewing opening. The system is surface-applied in a location exterior of all vertically operating window elements.

U.S. Patent No. 4,909,004 describes the use of a mesh screen for covering an opening in a structure (e.g. a garage). The screen is secured over the opening with VELCRO attachments, and a rain impervious sheeting is secured over the screen to increase the degree of enclosure of the structure in a selected amount and prevent wind and rain from passing through the screen.

U.S. Patent No. 5,193,602 describes a roll up canvas cover for window frames that utilizes VELCRO pads to secure the canvas covering in a rolled up position or in a fully extended closed position.

U.S. Patent No. 5,323,835 describes a removable screen for a car garage door. The top and sides of the screen are secured to the door casing with a VELCRO fastening system. A vertical zipper in the screen permits access into or out of the garage.

There has not heretofore been described a window screen system having the features and advantages provided by the present invention.

Summary of the Invention

In accordance with the present invention there is provided a frameless window screen system in which the screen mesh periphery has secured to it a strip of loop fastener material (i.e. VELCRO brand fastener material) and the corresponding window frame has secured to it a strip of the mating hook material. For example, the periphery of the screen or mesh may have secured to it a strip of the loop fastener material and the corresponding area of the window frame has secured to it a strip of the mating hook fastener material.

In order to affix the screen mesh to the window frame, the strip of fastener material on the outer edge of the mesh is aligned with and placed against the mating fastener strip which has been previously secured to a location on the window frame deemed most advantageous by the window designer. Each edge of the mesh includes a strip of the fastener material and each corresponding side of the window frame includes a strip of the mating fastener. Thus, each edge of the mesh can be stretched and then applied against the window frame, whereby the mesh is rendered taught and held tightly in place on the window frame regardless of its shape.

With the system of this invention, no separate rigid frame is required for the mesh or screen. Thus, the mesh can be easily removed for cleaning, transport or storage. The mesh can be easily rolled or folded and therefore it is mush easier to work with than conventional metal framed screens. Also, there is no rigid frame to be potentially damaged (e.g. bent or scratched) or cause injury to the installer or damage to other materials in proximity to it. Maintenance associated with painting traditional metal framed screens is eliminated.

Another advantage of the system of this invention is that the frameless mesh or screen can be easily made for any size or shape of window opening (including non-rectangular openings, round, oval, etc.). It also enables screens to be made

in sizes that are too large for the common metal-framed screen to survive handling. It can also be used on windows which do not include a location for a traditional metal-framed screen.

Another significant advantage of the frameless window screen system is that it can be implemented without reduction of the size of the visual opening of the window. Further, a sagging mesh can be easily stretched taught again by pulling the mesh away from the window frame on one side, stretching it tightly and then reattaching it to the window frame.

Yet another advantage of the system is that the mesh can be more effectively sealed to the window frame at its edges than conventional metal framed screens, thereby preventing insects from entering into the room around the edges. The system of this invention also reduces manufacturer shipping and storage costs for new production windows or replacement screens.

Other advantages and features of the system of this invention will be apparent from the following detailed description and the accompanying drawings.

Brief Description of the Drawings

The invention is described in more detail hereinafter with reference to the accompanying drawings where like reference characters refer to the same parts throughout the several views and in which:

FIGURE 1 is an isometric exploded view illustrating a window frame, a screen mesh, and a window sash for either an in-swinging or out-swinging rectangular window.

FIGURE 2 illustrates the use of a screen system of this invention with a window frame having an in-swinging window sash.

FIGURE 3 illustrates the use of a screen system of this invention with a window frame and a common, crank controlled, out-swing window sash.

FIGURE 4 illustrates the use of a screen system of this invention on another type of window frame.

FIGURE 5 illustrates the use of a screen system of this invention in comparison with a common aluminum framed screen in a typical crank controlled out-swing window frame.

Detailed Description of the Invention

As illustrated in the drawings, the system of this invention involves (a) securing a first strip of fastener material to the outer edges of a screen mesh and (b) securing a second strip of mating fastener material to the edges of a corresponding window frame.

In Figure 1, the edges of screen mesh 10 have adhered thereto (e.g. with adhesive or with stitching) continuos strips of fastener material 11. The window frame 13 has adhered thereto a continuous strip of mating fastener material 12. Thus, whenever the window sash 14 is open, each edge of the screen mesh can be stretched and applied to (i.e. simply pushed against) a corresponding edge of the window frame, whereupon the mesh becomes affixed to the window frame.

Figure 2 illustrates a window having fixed frame section 15 and movable in-swinging window sash section 16. A strip 12 of fastener material is secured to the fixed window frame section 15 as shown. The mating strip 11 of fastener material on the edge of the screen mesh can be simply applied to strip 12 to secure it in place without taking up problematic amounts of space with traditional screen frames.

Figure 3 illustrates another type of window in which the system of the invention may also be used. The fastener strip 12 is secured to window frame section 18A which is the crank housing portion of frame section 18. The screen mesh 10 (with strip 11 on its edge) can be stretched into place and mated with strip 12. The window sash section 17 is moved open or closed through traditional action of the crank hardware assembly 30 without interfering with the screen mesh.

Figure 4 illustrates use of the screen mesh system on another type of window frame 20. Strip 12 is secured to window frame component 20 at an appropriate location out of view so as to mate with the strip 11 on the edge of mesh 10 without interfering with the electric motor mechanisms mounted in location 22 that operate the window sash section 21.

Figure 5 illustrates how the system of the invention provides for strip 11 on the screen mesh and strip 12 on the window frame section 18A to be located outside of the window's visual opening compared to that visual opening resulting from a traditional metal frame screen 19, provided for reference purposes only, in its most common usage location.

Other variants are possible without departing from the scope of the present invention. For example, the strip 11 can be placed on each face of mesh, if

desired. This enables the mesh to be reversed on the window frame for any reason. The system of this invention can also be used on various other types of frames besides those shown in the drawings.

Although it is preferred for the strip of fastener along each edge of the mesh to be a continuous strip, it is possible to use several shorter strips along each edge if that was desired. Also, the width of each fastener strip may vary, as desired. The fastener materials used in this invention are conventional hook and loop fasteners (e.g. VELCRO brand fasteners or other similar hook and loop fasteners which are commercially available.

What is claimed is:

1. A frameless window screen system for use in combination with a conventional window frame, the system comprising:

(a) a screen mesh having side edges;

(b) a first fastener strip secured to said edges of said screen mesh;

(c) a second fastener strip secured to said window frame;

wherein said edges of said screen mesh can be aligned with said window frame in a manner that said first fastener strip mates with said second fastener strip to detachably secure said screen mesh to said window frame; wherein said first and second fastener strips comprise hook and loop fasteners.

2. The system in accordance with claim 1, wherein said screen mesh is rectangular.

3. The system in accordance with claim 1, wherein said screen mesh is non-rectangular.

4. A combination comprising:

(a) a window frame defining an opening;

(b) a screen mesh having a size and shape approximately equal to said opening; said mesh having side edges;

(c) a first fastener strip secured to said side edges of said screen mesh;

(d) a second fastener strip secured directly to said frame around said opening;

wherein said first and second fastener strips comprise hook and loop fasteners; and wherein said side edges of said screen mesh are aligned with said frame around said opening; and wherein said first fastener strip is detachably secured to said second fastener strip, whereby said screen mesh covers said opening.

IMPROVED WINDOW SCREEN SYSTEM

Abstract of the Disclosure

A window screen system is described in which the screen or mesh periphery has secured to it a strip of hook and loop fastener material and the corresponding window frame has secured to it a mating strip of similar fastener material. The strip of fastener material on the outer edge of the mesh is aligned with and placed against the mating fastener strip which has been previously secured to the appropriate location on the window frame. Each side edge of the mesh can be stretched and then applied against the window frame, whereupon the mesh is held tightly in place on the window frame. No separate frame for the mesh is required. The mesh can be easily removed for cleaning, transport or storage.

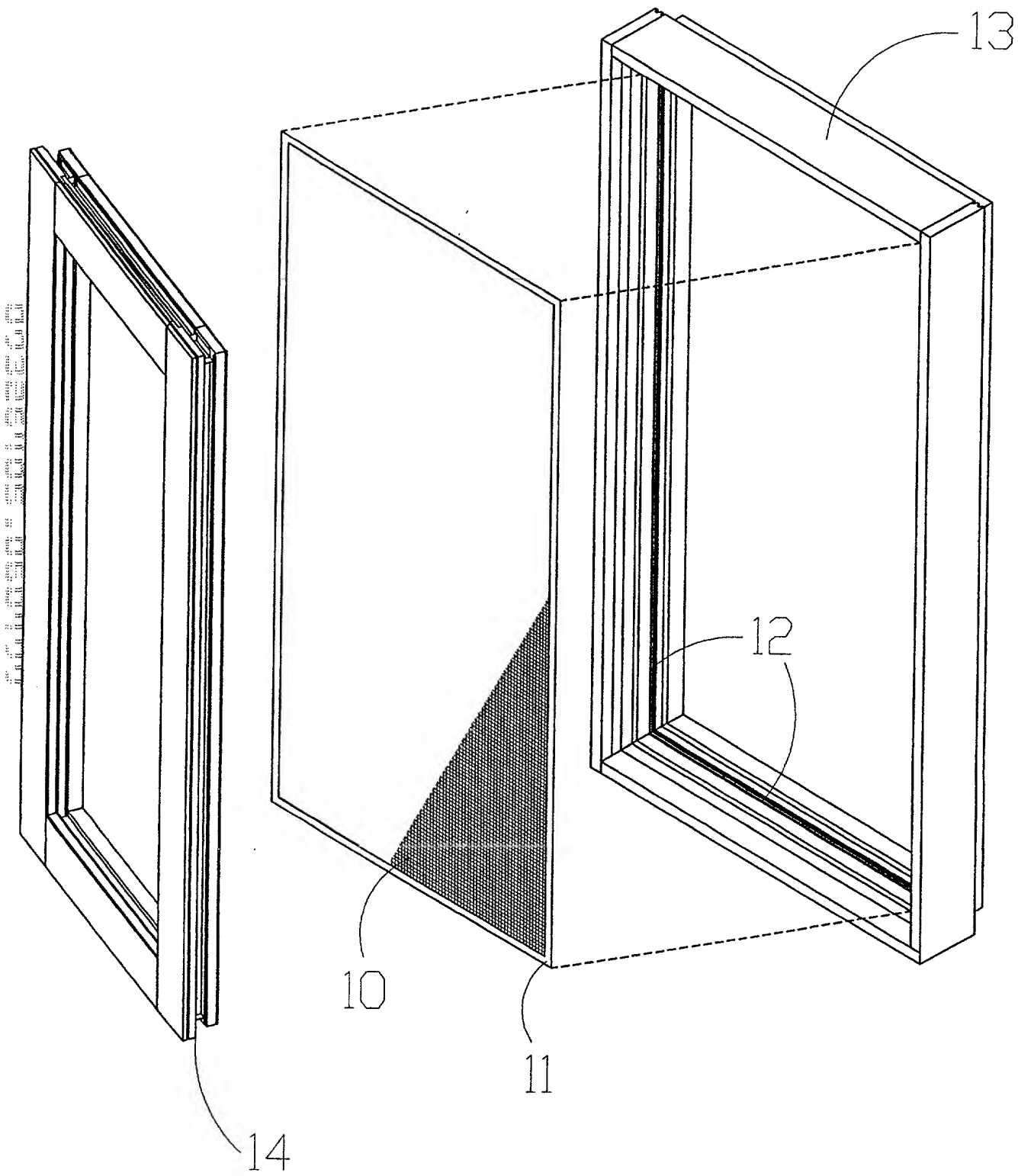

Fig. 1

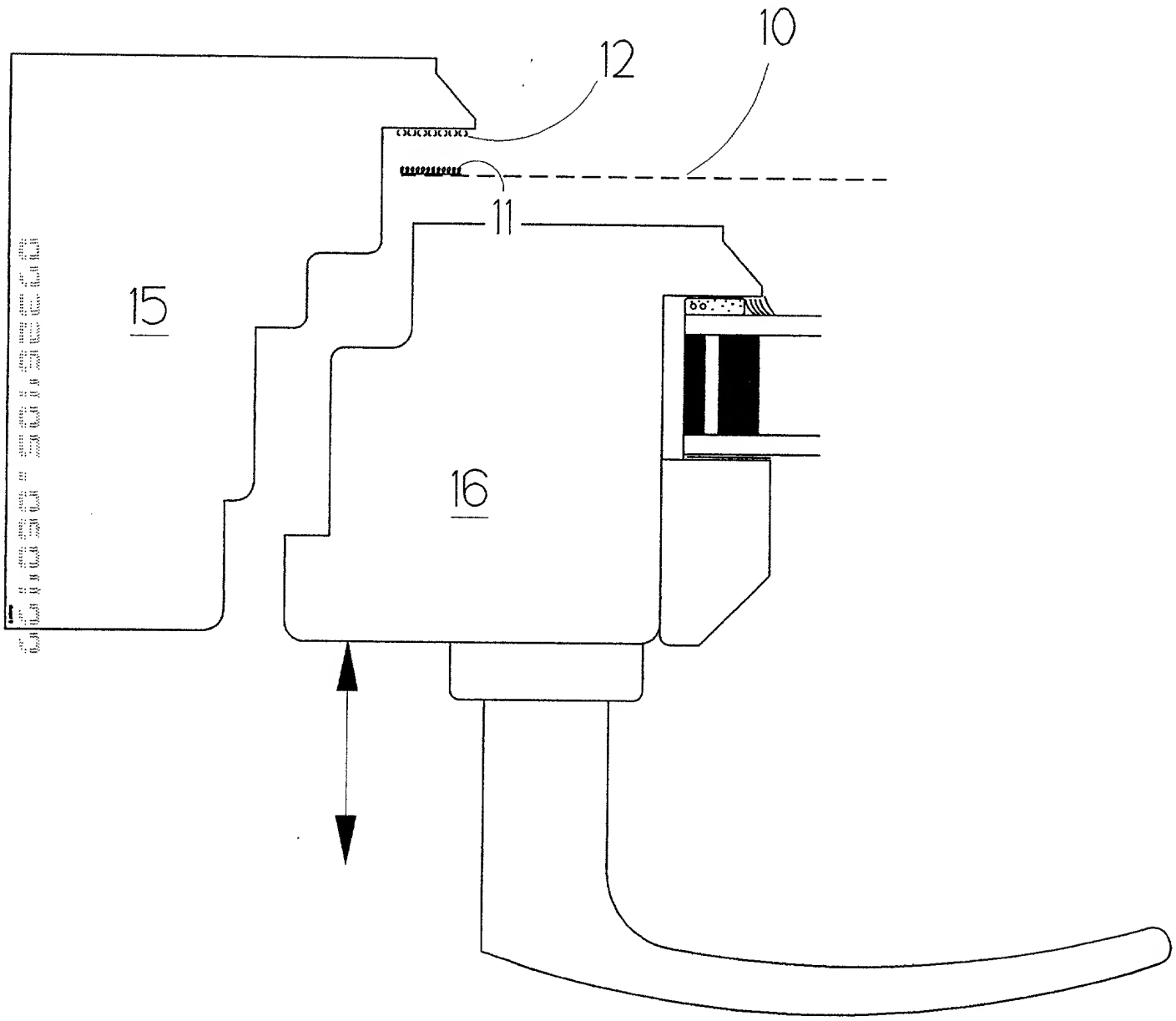

Fig. 2

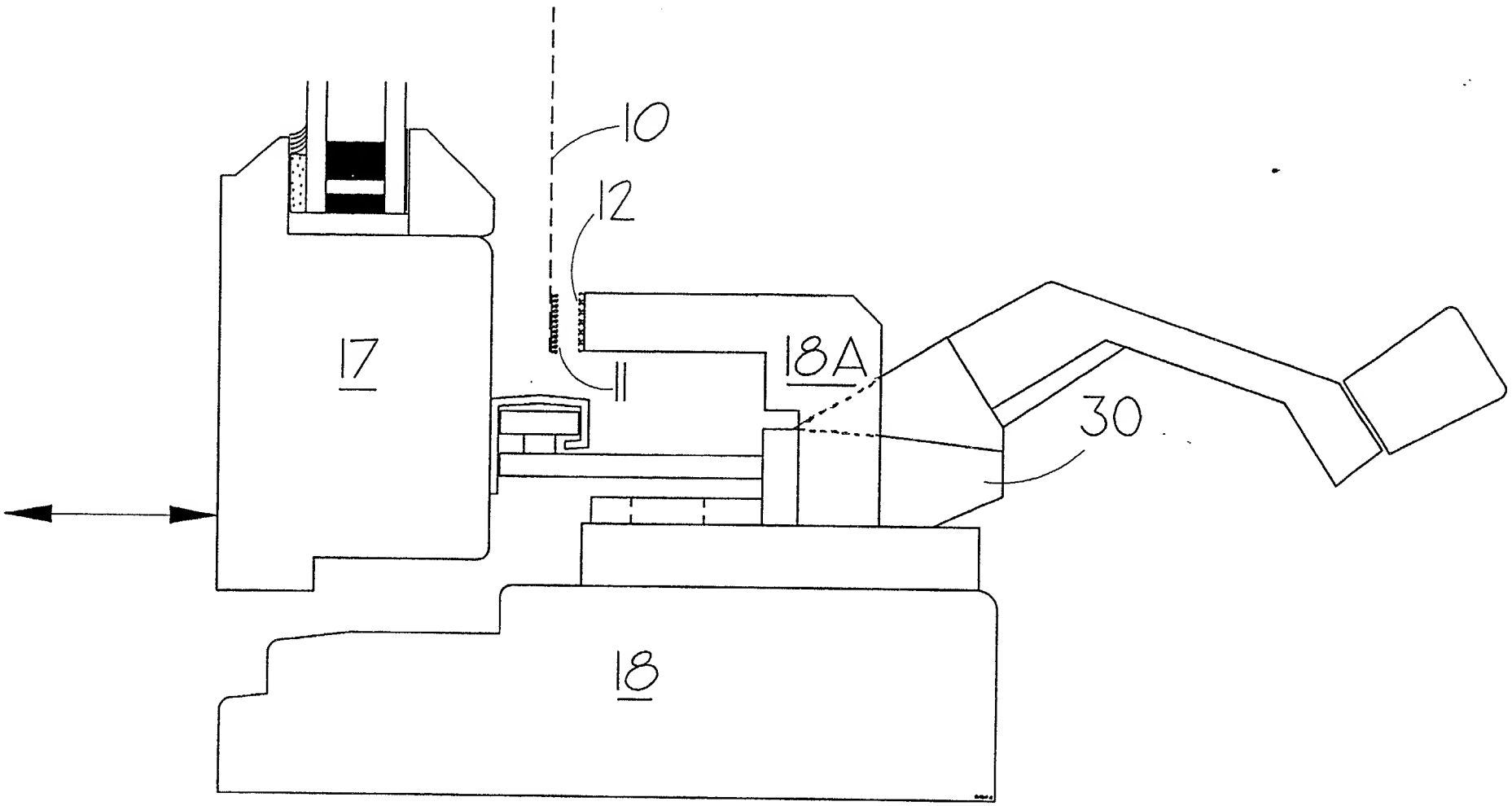

Fig. 3

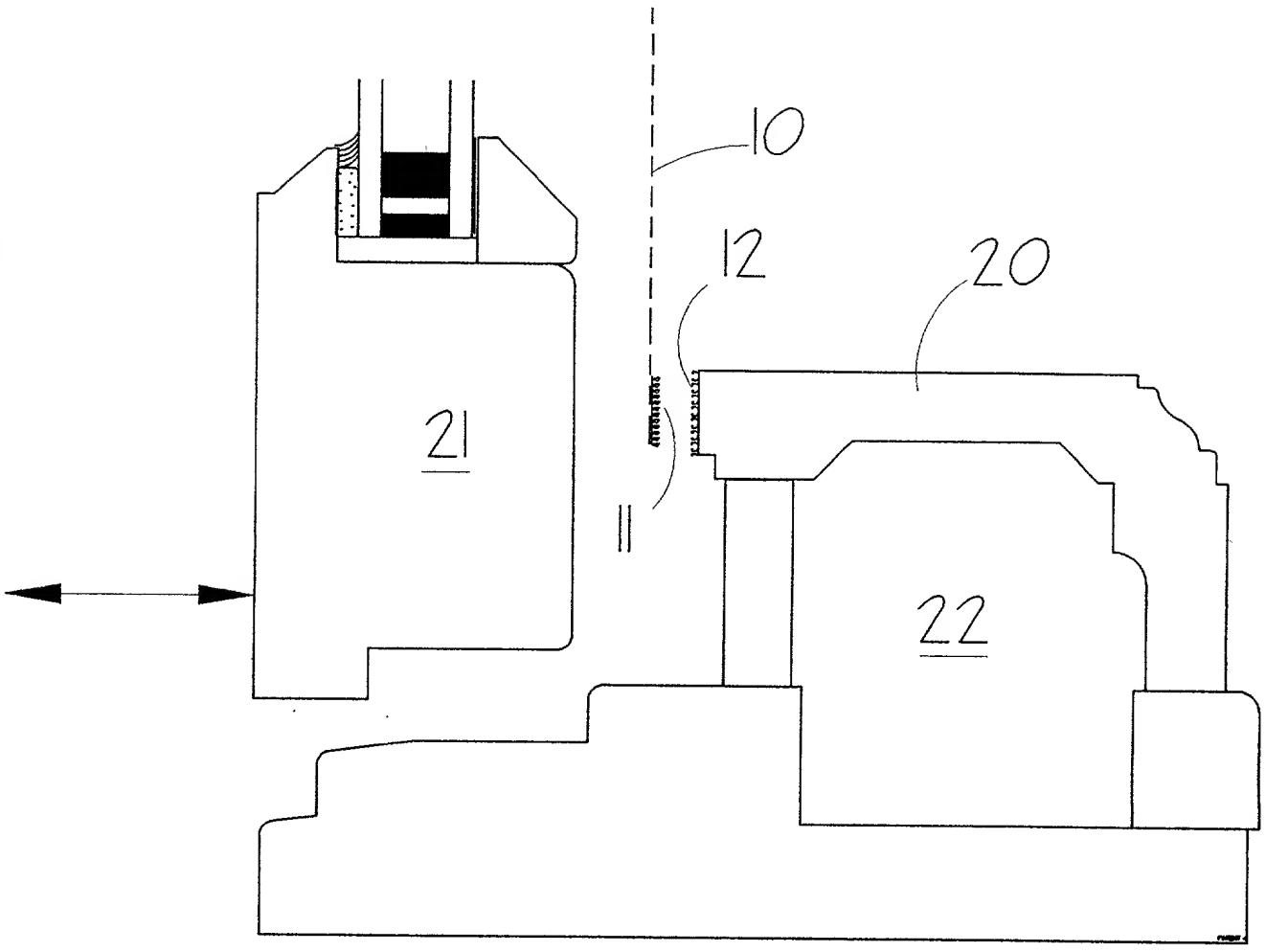

Fig. 4

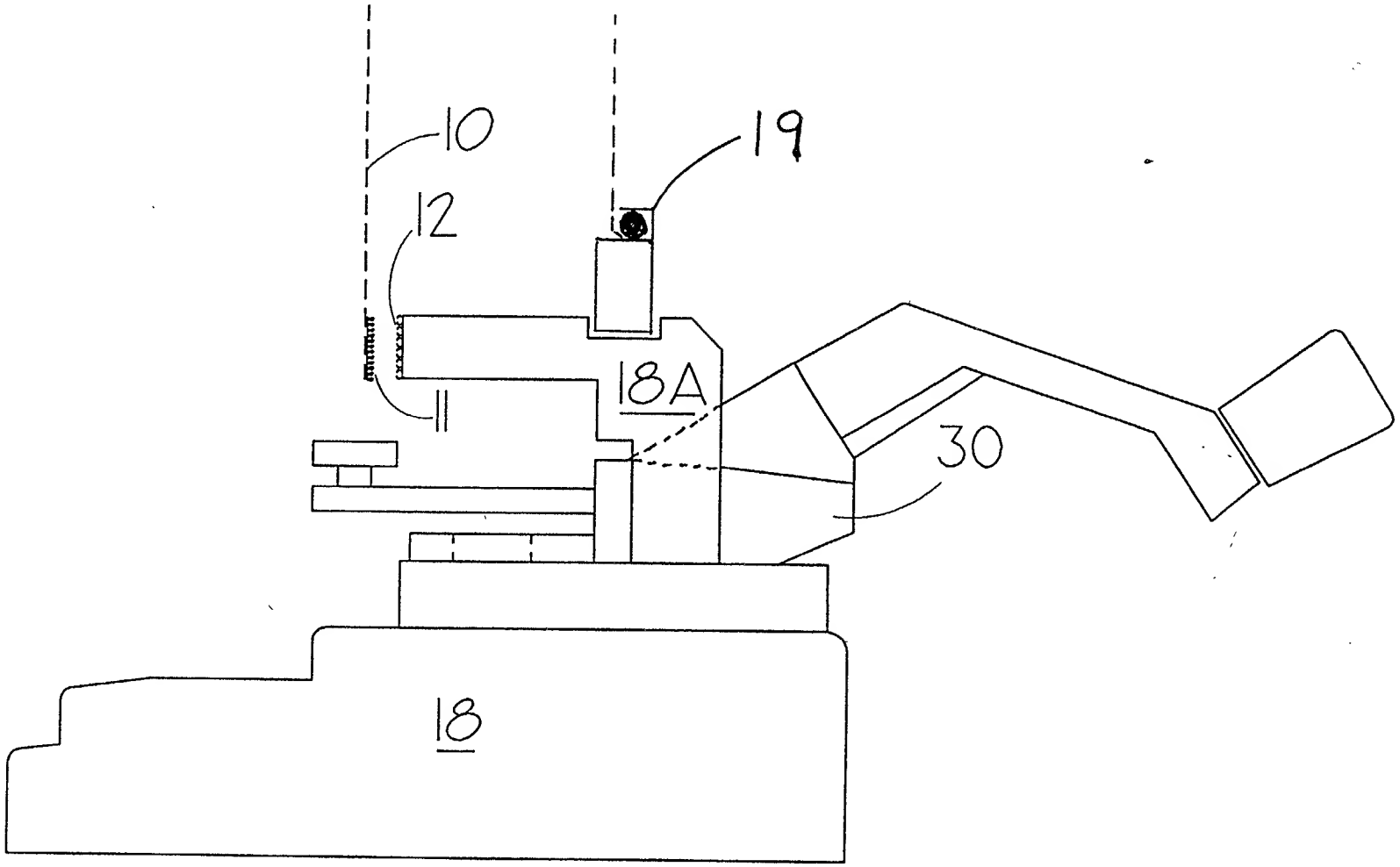

Fig. 5

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

ATTORNEY DOCKET NO. 363-01

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

IMPROVED WINDOW SCREEN SYSTEM

the specification of which is attached hereto unless the following box is checked:

( ) was filed on _____ as US Application Serial No. or PCT International Application Number _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

Foreign Application(s) and/or Claim of Foreign Priority

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or inventor(s) certificate listed below and have also identified below any foreign application for patent or inventor(s) certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES: ___ NO: ___
			YES: ___ NO: ___

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) lists below:

APPLICATION SERIAL NUMBER	FILING DATE
60/093,122	July 15, 1998

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NUMBER	FILING DATE	STATUS (patented/pending/abandoned)

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) listed below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

DEAN P. EDMUNDSON
Reg. No. 25,723

Send Correspondence to:	Direct Telephone Calls To:
Dean P. Edmundson 1136 E. Stuart St.-Suite 3220 Ft. Collins, Colorado 80525	Dean P. Edmundson 970-224-9502

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: DAVE B. LUNDAHL Citizenship: U.S.A.

Residence: Fort Collins, Colorado

Post Office Address: 4408 Gray Fox, Ft. Collins, Colorado 80526

X _____ X June 3, 1999

Inventor's Signature Date